



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 24, 2008

Dr. Gregory J. Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: Final Environmental Impact Statement and Section 4(f) Evaluation for NC 12 Replacement of Herbert C. Bonner Bridge (Bridge No. 11) over Oregon Inlet, Dare County, North Carolina; TIP Project No. B-2500; FHW-E40339-NC; CEQ No.: 20080373

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency Region 4 (EPA) has reviewed the subject document, and is commenting in accordance with Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) are proposing to replace the Herbert C. Bonner Bridge across Oregon Inlet in Dare County. Bonner Bridge was built across Oregon Inlet in 1962 and is approaching the end of its reasonable service life. The bridge is part of NC 12 and provides the only highway connection between Hatteras Island and Bodie Island. The project also includes NC 12 between Oregon Inlet and the community of Rodanthe, an area that is at risk because of shoreline erosion.

FHWA and NCDOT issued a Supplement to the 2005 Supplemental DEIS in February of 2007. A Supplemental Draft Environmental Impact Statement (SDEIS) was issued in September of 2005. The Draft Environmental Impact Statement (DEIS) was issued in November, 1993. A preliminary Final EIS (FEIS) was prepared in 1996 but was not formally released. However, the preliminary FEIS was distributed to numerous Federal and state agencies in May 2001 for informal review and comment.

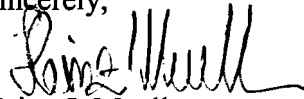
The proposed project has been in the NEPA/Section 404 Merger Process since July 31, 2002, and EPA has been involved with this project as a participating team member. In August of 2007, the Concurrence Point 3, selection of the Least Environmental Damaging Practicable Alternative (LEDPA), was elevated to the Merger 01 NEPA/Section 404 Review Board that consisted of the U.S. Army Corps of Engineers (USACE), North Carolina Department of Environment and Natural Resources (NCDENR), FHWA and NCDOT. The Merger 01 Review Board selected the Parallel Bridge Corridor/Phased Approach Rodanthe Bridge (PBC/PA-RB) Alternative as the LEDPA. EPA prepared and submitted a Merger 01 elevation issue brief on August 22, 2007, for the Review Board's consideration.

EPA continues to have substantial environmental concerns regarding the preferred (selected) PBC/PA-RB Alternative. EPA's specific comments on the FEIS are included in an attachment to this letter (See Attachment). EPA's environmental concerns are based on a number of project impacts and issues including: the project's adverse impacts to jurisdictional waters of the U.S., the long-term effects to water quality from the stormwater runoff from the bridges, the long-term impacts to the Pea Island National Wildlife Refuge including the impact to migratory birds and the potential impacts to threatened and endangered species, the visual impacts to the Cape Hatteras National Seashore, the prolonged impacts to natural resources from phased construction, and the risk of constructing additional bridges and roadway (between "hotspots") along the NC 12 corridor that will be subject to worsening ocean wave and scour conditions.

The vulnerability of maintaining a reliable transportation corridor along an ever-changing coastal barrier island is particularly a concern with the PBC-PA-RB Alternative. After considering all of the issues presented in the 1993 DEIS, the 2005 SDEIS, the 2007 SSDEIS, and the FEIS, EPA continues to believe that the transportation agencies should re-evaluate some of the preliminary alternatives that were not carried forward for detailed study, including the rehabilitation of the existing Bonner Bridge combined with continued NC 12 maintenance activities. Based upon the most recent Outer Banks Task Force meeting in July of 2008, current NCDOT Bonner Bridge maintenance contracts and rehabilitation projects appear to be very successful in extending the useful life of the existing bridge and keeping the NC 12 corridor open to traffic. EPA is also concerned with the adequacy of the proposed compensatory mitigation plan for jurisdictional wetland impacts that is being offered by FHWA and NCDOT.

EPA acknowledges the efforts by FHWA and NCDOT to incorporate bicycle/pedestrian lanes into the design of the new bridge and along NC 12. EPA plans to continue to work with FHWA, NCDOT and other Merger team agencies on this proposed project. If there are any questions, please feel free to contact Mr. Christopher A. Militscher of my staff, at (919) 856-4206, or Ms. Kathy Matthews of EPA's Wetlands Section at (919) 541-3062.

Sincerely,



Heinz J. Mueller

Chief, NEPA Program Office

Attachment

cc: J. Sullivan, FHWA-NC
P. Benjamin, USFWS-Raleigh
K. Jolly, USACE-Wilmington District

ATTACHMENT
B-2500, NC 12 Replacement of Bonner Bridge
Dare and Hyde Counties

FEIS – Detailed EPA Comments

In general, it appears NCDOT has provided much more additional information and analysis in the FEIS, including a scour analysis, discussion of the shoreline and potential impacts of Sea Level Rise (SLR), information on potential water quality impacts from untreated storm water, potential storm water treatment methods, and wetland impacts. However, most of our comments and environmental concerns from previous letters are still potentially unresolved.

On Page xxi, the FEIS states that a bridge within the replacement bridge corridor (i.e., PBC/PA Alternatives) alternatives would have a negligible effect on inlet migration, profile, and gorge alignment other than the continued effect of the presence of the terminal groin. However, it is the need to retain the terminal groin for these alternatives that has the significant effect on inlet migration, profile, and gorge alignment. On Page xxi, the FEIS states that the Phased Approach alternatives (including the preferred alternative) would directly affect activities on the beach front, from the presence of bridge piles on the beach and in the surf. These alternatives appear to have the most substantial effect on recreational use of the PINWR beaches, whereas the Pamlico Sound Bridge Corridor (i.e., PSBC Alternatives) alternatives would have no effect. On page xxxv in the Green Sheets (i.e., Project Commitments), NCDOT states that they consider the 2060 high erosion shoreline to be reasonable for planning purposes. NCDOT also plans to implement a monitoring program on Hatteras Island in the project area to assist in decision-making for Phases III and IV. These monitoring studies may greatly change the plans and timing for Phases III and IV.

EPA notes the changes in design for bicycle accommodations indicated on Page xxxiii of the FEIS. The design of an 8-foot wide shoulder would be safer for bicycle and pedestrian traffic than the current 2-foot wide shoulders on Bonner Bridge. EPA also acknowledges that a bicycle-safe rail on the bridges would be provided. EPA requests that FHWA and NCDOT consider the use of a 4-foot separated bicycle shoulders with rail sections. This could reduce project construction costs by a total of 8 feet in width and also serve to provide bicycle and pedestrian uses consistent with the new roadway's 4-foot paved shoulders along NC 12. NC 12 south of Oregon Inlet is not a designated bicycle route. EPA supports the Outerbanks Bicycle initiatives and strongly recommends the 4-foot outside shoulders along NC 12 between Bonner Bridge and Hatteras Village.

On Page 1-6, the FEIS discusses the USACE's plan to conduct a feasibility study of Hatteras and Ocracoke islands to determine possible long-term solutions to the transportation problems. This T.I.P. project # R-3116H and its associated feasibility study are currently unfunded.

Section 2.10.1.2 of the FEIS includes a discussion of design criteria for the bridges, to withstand wave energy, storm surge, and scour. However, it appears that AASHTO has not finalized guidance on specifications. Therefore, the FEIS simply states that NCDOT will design the bridges in conformance with requirements (unspecified) and to deal with conditions that are anticipated. It remains unclear whether NCDOT and FHWA have the ability to design structures that will withstand the heavy surf along the shoreline. This issue has been generally discussed for several years during Merger team meetings. EPA believes that these critical design and safety specifications need to be finalized before any Phase II decisions are made (i.e., A bridge at Rodanthe).

A haul road is expected for construction of the northern approach to the Phase I bridge. The FEIS indicates on Page 2-112 that this haul road will be constructed on top of sandy soil. EPA requests that haul roads should not be used over wetlands as compaction may prevent the wetland from being restored.

On Page 2-127, NCDOT commits to implement an island monitoring program in the project area and to conduct breach response-related data gathering to help determine where acceptable sand could be found to close breaches, and options available for bridging a breach. EPA believes that this monitoring program is an essential component of the long-term strategy for addressing unpredictable and dynamic shoreline erosion problems along the NC 12 corridor. On Page 2-133 of the FEIS, the Highway Cost by Expenditure Timeframe for the Phased Approach/Rodanthe Bridge from 2021 to 2060 is believed to be under-estimated, considering the extended construction and bridge maintenance that is expected. Considering that NCDOT and FHWA do not appear to have reliable information on the design specifications for these bridges that will be in the surf zone and out at sea, the costs may be much higher than the amount estimated. Also, the estimates are presented in 2006 dollars, which may also significantly underestimate the future costs for additional bridges. On Page 2-141 of the FEIS it states that the Refuge costs include costs to provide alternate access to the Refuge. These costs are only considered for the two PSBC alternatives. However, the need for alternate access may be applicable for the Phased Alternatives also, if the shoreline is allowed to naturally migrate, and existing paved access roads are lost to the ocean.

The FEIS does not identify potential disposal sites for excavated, dredge, and fill material generated by the bridge construction. On Page 2-146 of the FEIS it simply states that appropriate locations will be determined near the time of construction. EPA requests that FHWA and NCDOT investigate potential environmentally acceptable locations as soon as possible and in concert with the USACE and other regulatory agencies. These disposal locations also need to be identified and detailed for any future Concurrence Point 4A Merger meetings on avoidance and minimization.

EPA recognizes that Sections 3.6.3 and 4.6.6 of the FEIS discuss potential shoreline changes during the life of the project (through 2060), and include a discussion of accelerated Sea Level Rise. The Peer Exchange (a panel of coastal engineering and geology experts) did not recommend revising the 2060 shoreline. The FEIS states that the conditions expected to occur in the shoreline forecasts in the FEIS are those which

“Scenario 2 [20th century rate + 2 millimeters per year] considers ‘virtually certain’ to occur (overwash, erosion, and inlet formation).” However, the likelihood of “Scenario 3 [20th century rate + 7 millimeters per year]” was not extensively discussed in the FEIS. According to Page 3-59, Scenario 3 “will lead to further loss of island width and ‘threshold behavior’ leading to island segmentation and disintegration.” Based on recent projections, it appears increasingly probable that a greater rate of sea level rise than 2 millimeters per year will occur, and therefore the potential for Scenario 3 should be further considered during planning of future Phases. As the FEIS indicates, the potential for Scenario 3 should be investigated as part of the future monitoring prior to construction of Phases II – IV.

On Page 3-64 of the FEIS it is unclear whether the terminal groin would need to remain after Phase II bridges are constructed. The potential for removing the terminal groin after Phase II should be fully investigated in a future NEPA document.

Section 4.6.8 of the FEIS discusses potential impacts that the bridge piles would have on scour, breakers, waves, ‘longshore’ sediment transport, beach erosion, and potential for island breaches. However, the FEIS does not discuss the impact of the waves, scour, sediment transport, and other offshore coastal process on the bridge piles. It remains unclear whether a bridge may be practicably maintained on the beach and in the ocean.

Section 4.7.2 of the FEIS discusses water quality impacts from construction and operation of the alternatives. Temporary BMPs must be implemented prior to construction to adequately treat construction storm water from the project. The PSBC alternatives have a slightly larger amount of impervious surface than the preferred alternative (86.6 acres vs. 72.4 acres). The FEIS provides estimated annual pollutant loads for the various alternatives for several pollutants. Also, several potential BMPs are described. It appears that end-of-pipe treatment is feasible at the northern and southern ends of the PSBC alternatives, but may be more difficult to construct on the replacement bridge alternatives due to slope requirements of the bridge, and potential issues with acquiring land for water treatment on the Refuge side of the bridge. The FEIS indicates that it is not possible to provide treatment for the entire bridge length of either the PSBC alternatives or the short bridge alternatives. As future bridge phases of the PBC/PA Alternative pass into the sea, storm water treatment would not be possible on those sections. In Section 4.7.6.5, the FEIS states that runoff from Bonner Bridge is currently not captured and treated, so the proposed project will not change runoff in the vicinity. However, the Bonner Bridge was constructed prior to passage of the Clean Water Act, which prohibits un-permitted discharges of pollutants to waters of the U.S., including Oregon Inlet and the Atlantic Ocean. FHWA and NCDOT have not demonstrated how they will comply with the Clean Water Act requirements for future phases of the project.

Page 4-114 of the FEIS describes the timing of construction for the four phases of bridges in the Phased Approach alternatives. This section describes 7 years of construction for Phases I and II (together), followed by a 7-year gap of no construction, then 10 years of construction for Phase III, a 10-year period of no construction, then 10 years of construction for Phase IV. This totals 27 years of construction over a 44-year

period, although the FEIS states that it is 17 years of construction. Given the unknowns in this project concerning shoreline erosion, breach/inlet formation, and other unpredictable factors, this timeline may change considerably, with phases built sooner than predicted. The FEIS does not investigate the potential impacts of 27 years of construction in a shorter overall timeframe, although it seems likely.

Page 4-134 and 4-135 of the FEIS discuss on-site or other opportunities in close proximity to the project to provide compensatory mitigation for any permitted impacts. The FEIS also recommends that the Ballance Farm Mitigation Site may be used for all compensatory mitigation requirements. However, Ballance Farm is a considerable distance from the project site and it was not intended to provide mitigation for the B-2500 project. It is also in a different 8-digit Hydrologic Unit (HUC). More importantly, the tidal marsh mitigation at Ballance Farm is freshwater marsh, not salt marsh. Therefore, mitigation at Ballance Farm would be out-of-kind and out-of-HUC. EPA prefers that wetland impacts on the Outer Banks be replaced with in-kind wetland mitigation on the Outer Banks. If there are opportunities to restore wetlands on-site or on the Outer Banks, those opportunities should be pursued first. There may be several on-site opportunities for wetland mitigation. Submerged Aquatic Vegetation (SAV) must be mitigated as close to the project as possible and within appropriate areas. We defer to NOAA and DCM on the determination of SAV mitigation.